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PATENT



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

**In re Application of:**

**Inventor:** Karlheinz MAYER et al.

**Application No.:** 09/787,919

**Confirmation No:** 1205

**Filed:** June 1, 2001

**Attorney No.:** MAYE3003/JEK/JJC

**Customer No.:** 23364

**Examiner:** Anthony H. NGUYEN

**Art Unit:** 2854

**For:** GRAVURE PROCESS FOR PRINTING ADJACENT COLOUR  
SURFACES WITH VARIOUS COLOUR COATING THICKNESSES

**APPEAL BRIEF**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This appeal brief is filed pursuant to the applicants' appeal to the Board of Patent Appeals and Interferences from the rejection of claims 1-3, 20 and 23 in the above-application.

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**I. REAL PARTY OF INTEREST**

The real party in interest is the assignee of record: Giesecke & Devrient GmbH (Munich, GERMANY).

**II. RELATED APPEALS AND INTERFERENCES**

There are no other appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**III. STATUS OF CLAIMS**

Claims 1-24 are currently pending in the above-referenced application.

Claims 1-3, 20 and 23 are presently rejected. Claims 1, 3 and 20 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 4,033,059 (Hutton et al.). Claims 2, 20 and 23 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 4,033,059 (Hutton et al.).

New claims 1-3, 20 and 23 were finally rejected in the office action of August 12, 2003.

Claims 24-27 presently stand allowed.

Claims 4-19, 21 and 22 are withdrawn from consideration.

Applicants appeal from the rejection of claim 1 as being anticipated by U.S. Patent 4,033,059 (Hutton et al.). Claims 2, 3, 20 and 23 depend from claim 1 and their dependency is based on the patentability of claim 1 and their individually recited features.

A copy of the appealed claims is included in the attached Appendix I.

A copy of U.S. Patent 4,033,059 is included in the attached Appendix II.

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**IV. STATUS OF AMENDMENTS**

All proposed amendments have been entered and no amendments have been officially proposed since the mailing of the rejection in the office action dated October 4, 2004.

**V. SUMMARY OF CLAIMED SUBJECT MATTER**

A problem to solved by the present invention is to provide a data carrier having adjacent ink areas with different thicknesses using an intaglio printing process wherein the ink areas do not run into each other and are clearly delimited from one another (page 3, lines 24-26).

According to claim 1, a data carrier 10 is provided that includes a printed image that is defined by at least first and second ink areas 12a, 12b directly adjacent to one another (page 5, lines 25-26; FIG. 2). The first and second ink areas 12a, 12b have different thickness  $D_a$  and  $D_b$  that progressively decrease towards an acute and discrete borderline within border region B (page 5, line 33 through page 6, line 9; FIG. 2).

The thicknesses  $D_a$  and  $D_b$  of the first and second ink areas 12a, 12b reduce at the border line to a minimum ink thickness such that the first and second ink areas 12a, 12b do not intermingle with one another (page 6, lines 11-15; FIG. 2). Because the ink layer thicknesses  $D_a$  and  $D_b$  decrease continually, the borderline is not discernable to the unaided human eye (page 6, lines 6-9; FIG. 2)

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**VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 4,033,059 (Hutton et al.).

## VII. ARGUMENT

### A. Overview

The Hutton et al. patent fails to disclose or suggest each and every feature, whether expressly or inherently, recited in claim 1. Moreover, one skilled in the art would not reasonably understand or infer from the Hutton et al. patent each limitation of claim 1.

Accordingly, the Hutton et al. patent does not anticipate claim 1 of the pending application.

### B. Pertinent Law

Anticipation under 35 U.S.C. § 102(b) is established only when a single prior art reference discloses, either expressly or under the principles of inherency, each and every element of the claimed invention. *See, for example, In re Paulsen*, 30 F.3d 1475, 1480-1481, 31 USPQ2d 1671, 1675 (Fed. Cir. 1994); and *In re Spada*, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990).

The dispositive question regarding anticipation is whether one skilled in the art would reasonably understand or infer from the prior art reference's teaching that every claim limitation was described in that single reference. *Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358, 1368, 66 USPQ2d 1801, 1809 (Fed. Cir. 2003). To establish anticipation, it must be shown that a single prior art reference describes each and every limitation of a claimed invention. *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1379, 231 USPQ 81, 90 (Fed. Cir. 1986); cert. denied, 480 U.S. 947 (1987). The description in the reference may be either express or inherent. *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).



In order for a reference to serve as an anticipatory reference when such reference is silent about an asserted inherent characteristic, the gap in the teachings of the reference may be filled with recourse to extrinsic evidence. It will be noted, however that evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference. *Cont'l Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed.Cir.1991).

C. The Subject Matter Recited in Claim 1 is Not Anticipated by the Hutton et al. Patent

1. Basic Description of the Hutton et al. Patent

The Hutton et al. patent is generally directed to documents of value that include an intaglio printed transitory image and methods for producing the same. While the Hutton et al. patent describes numerous embodiments of documents of value, the embodiment according to FIGS. 12-15 is primarily asserted against the pending application. In particular, the sectional view of FIG. 15 is relied upon in the rejection as constituting a prior art teaching which anticipates claim 1 of the pending application.

According to the embodiment of FIGS. 12-15, a document of value is provided that forms a transient image that is visible when seen from a 90° angle of view but which disappears when the angle of view becomes sufficiently acute (column 16, lines 34-39). An intaglio imprint 50 is provided on a sheet of paper 51 that includes a background 52 that is formed of parallel, spaced, raised lines and the transient image 54 (column 16, lines 40-43). The transient image comprises additional intaglio ink lines 55 that are parallel with and interposed between ink lines 53 of the background (column 16, lines 44-46). As best seen in FIGS. 14 and 15, the image forming lines 55 are substantially lesser in depth than the background forming lines 53.

FIG. 15 is an enlarged schematic sectional view of FIG. 12 which shows an embodiment of an intaglio imprint 50. In observing FIG. 12, it is clear that there is a clearance between adjacent ink lines 53, 55. While FIG. 15 may be difficult to discern at certain portions, it is clear from the description of the embodiment in FIGS. 12-15 that the background lines 53 and image lines 55 are generally parallel relative to one another (column 16, lines 40-48), and as such, background lines 53 and image lines 55 are clearly spaced from one another in FIG. 12.

While the distance of each clearance between the background and image lines varies in FIG. 15, such variance appears more as an indication of poor patent copies than an objective teaching of acute and discrete borderlines. The written description of the Hutton et al. patent fails to provide any rationale for varying clearances between adjacent background and image lines.

It is explained in the introduction of the Hutton et al. patent that the image and background lines are substantially parallel spaced (col. 8, lines 14-24). While the Hutton et al. patent indicates that it is within the invention to employ types of arrangements wherein image and background lines are other than parallel, there is nothing in the description that disaffirms the spacing of the image and background lines by a clearance. Moreover, even though it is disclosed that the image and background lines may be other than parallel, the patterns that are described in the invention are either rows or lines of dots which are spaced apart (column 11, lines 28-40; column 14, lines 27-46 describing "other" spaced and raised inked patterns).

## 2. Differences in the Teachings of the Hutton et al. Patent from the Claimed Invention Recited in Claim 1

In the discussion that follows, it is submitted that the data medium recited in claim 1 of the pending application differs from the teachings of the Hutton et al. patent on the basis of the following particulars:

a. the Hutton et al. patent does not disclose, teach or suggest arranging first and second ink areas positioned "directly adjacent" to one another;

b. the Hutton et al. patent does not disclose, teach or suggest a borderline located between adjacent ink areas that is both "acute and discrete";

c. the Hutton et al. patent does not disclose, teach or suggest a borderline that is configured such that adjacent ink areas do not intermingle with one another;

d. the drawing figures of the Hutton et al. patent have been improperly interpreted in the office actions and attributed features that are not supported by the written description of the Hutton et al. patent; and

e. the known methods of intaglio printing at the time of publication of the Hutton et al. patent would not produce the data medium of claim 1.

a. First and second ink areas positioned "directly adjacent" to one another

The Hutton et al. patent fails to disclose or suggest, either explicitly or inherently, first and second ink areas that are "directly adjacent" to each other. The examiner indicates that there is a gap between adjacent ink areas 53, 55 in FIG. 15 of the Hutton et al. patent. This acknowledgment of a gap between adjacent ink areas appears at odds with the limitation that the first and second ink areas are directly adjacent to one another and that the borderline is not visible to the naked eye. If indeed there was a gap or clearance between each of the ink areas in the Hutton et al. patent, as interpreted by the examiner, such ink areas could not be considered to be "directly adjacent."

The expression "directly adjacent" has not been considered in view of the limitations of the claim 1. Specifically, the directly adjacent first and second ink areas pass through a minimum in the region of the borderline. This implies that the

first and second ink areas are directly in contact with one another and precludes the interpretation that there is a defined clearance therebetween.

The most magnified view of adjacent ink areas in the Hutton et al. patent are provided in FIGS. 18 and 19 (discussed at column 18, lines 52-64). According to FIGS. 18 and 19, large square ink areas 70 and intermediate dot ink areas 72 or 74 are clearly shown as being spaced from one another. It is clear from these detailed views that there is indeed a gap between the adjacent square and dot ink areas. Moreover, there is no teaching in the Hutton et al. patent that distinguishes the spacing arrangement of the ink areas in FIGS. 18 and 19 from the image lines 53, 55 in FIG. 15.

In view of these observations, nowhere is there a teaching in the Hutton et al. patent that would lead a skilled artisan to provide an intaglio printed image on a data medium defined at least in part by having first and second ink areas that are directly adjacent to one another such that the first and second ink areas pass through a minimum in the region of a borderline not visible to the naked eye.

- b. Borderline defined as “acute and discrete” and located between adjacent ink areas

The Hutton et al. patent does not disclose or suggest a borderline that is defined as being “acute and discrete” which is located between adjacent ink areas. The examiner has identified the teachings of FIG. 3 to support the argument that indeed the Hutton et al. patent discloses a borderline of the type recited in claim 1. This analysis of FIG. 3 is simply incorrect. FIG. 3 of the Hutton et al. patent clearly does not show a borderline. At best, the Hutton et al. patent shows a clearance spaced between each of the neighboring ink areas 14a, 14 in FIG. 3, but such clearance can hardly be construed as “acute and discrete.”

Turning to FIG. 15, this drawing is inconclusive as to whether there is an acute and discrete borderline between adjacent ink areas. Moreover, the written description does not provide any teaching in reference to any of the drawings that would tend to indicate that a borderline is both acute and discrete. If anything, stating that the drawings support the notion of acute and discrete borderlines is merely speculative without any real support in the patent.

It is submitted that a skilled artisan would not understand from the drawings of the Hutton et al. patent the feature of providing an "acute and discrete" borderline between adjacent ink areas since there is no real evidence provided by the Hutton et al. patent to support such a notion. In view of this observation, it is asserted that the examiner would not have considered the Hutton et al. patent to teach such a feature without the benefit of the pending application.

- c. Borderline wherein adjacent ink areas do not intermingle with one another

Third, the Hutton et al. patent fails to teaches ink areas that have a borderline that is arranged with the aforesaid limitations such that the first and second ink areas do not intermingle with one another. In this regard, the Examiner's determination that the ink areas of the Hutton et al. patent do not intermingle with one another while possessing the aforesaid characteristics appears, at best, speculative. For all the drawings of Hutton et al. patent show, the neighboring ink areas may just as well intermingle at a shared borderline or by a clearance.

There is no disclosure or suggestion, either explicit or implicit, in the written description of the Hutton et al. patent that supports the notion that there is a borderline between directly adjacent ink areas of the intaglio printed areas. Instead, guesses regarding the drawings are used by the examiner to support the notion that

the Hutton et al. patent teaches a borderline between directly adjacent ink areas of the intaglio printed areas.

In order to determine whether the intaglio printed images shown in the figures of the Hutton et al. patent are as recited in claim 1 of the pending application, the drawings should be magnified. Regrettably, the Hutton et al. patent fails to provide any views of the intaglio printed lines of the magnitude schematically shown in the pending application. This is particularly evident in view of the broadly displayed plan views of the embodiments of the intaglio imprints (FIGS. 1, 5, 6, 9, 12, 16). Moreover, the sectional views of the Hutton et al. patent, especially FIG. 15, fail to exemplify if indeed the adjacent ink areas are separated by a borderline such that the ink areas do not intermingle.

Thus, due to the lack of specificity in the Hutton et al. patent, it is submitted that a skilled artisan would not be able to discern from the drawings of the Hutton et al. patent whether indeed the ink areas of the intaglio printed images therein are defined by directly adjacent ink areas separated by a discrete and acute borderline such that the ink areas do not intermingle.

d. Interpretation of drawing figures

An overall objection to the rejection of claim 1 is that the examiner has blindly relied on the drawing figures of the Hutton et al. disclosure as evidence that the data medium of claim 1 is taught in the prior art. Of course, it is recognized that drawings in the prior art are available as qualifying teachings of anticipation. Nonetheless, it is maintained that the identified drawings of the Hutton et al. patent do not sufficiently set forth the recited relationships attributed by the examiner and expressly recited in claim 1 of the pending application.

In observing FIG. 15, the ink areas 53, 55 are inconsistently drawn and the spacing between each of the ink areas is random and largely inaccurate. Thus,

these drawings are schematic and can hardly be construed as defining precise relationships of the very type required by claim 1. Moreover, the written specification of Hutton et al. fails to make up for the shortcomings of the drawings, and is thus inadequate in describing or suggesting each and every feature of the ink areas of claim 1.

The examiner's comments appear as if the examiner is asserting that FIG. 15 inherently discloses each and every feature of claim 1. As pointed out above, it is submitted that the examiner's comments are based on sheer speculation, especially since the drawings of Hutton et al. are not drawn to scale and overall, as pointed out above, display inconsistent relationships between neighboring ink areas. Moreover, judging from the lack of support in the written description of the Hutton et al. patent, it was not the intention of the Hutton et al. Patent drawings to teach or suggest the specific relationships between directly adjacent ink areas of the type recited in claim 1.

It is well-settled that under principles of inherency, when a reference is silent about an asserted inherent characteristic, it must be clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Furthermore, it is well understood that absence from a reference of any claimed element negates anticipation.

It is submitted that the Hutton et al. patent fails to teach or suggest each of the claimed elements and relationships of the data medium of claim 1. As explained, the evidence provided by the examiner does not reveal that the ink areas of the Hutton et al. patent are "directly adjacent" to one another, that there are "acute and discrete" borderlines between the directly adjacent ink areas, and that neighboring ink areas do not intermingle with one another. The amount of evidence provided in support of

this rejection is simply insufficient to sustain a rejection based on anticipation by the prior art.

When properly interpreted, the Hutton et al. patent appears to require clearances between directly adjacent ink areas. The Hutton et al. patent does not discuss or show such adjacent ink areas having an acute and discrete borderline located therebetween wherein the ink areas do not intermingle with one another, but instead describes a general purpose method for using intaglio printing to form transitory images by way of spaced lines. Thus, even an artisan of ordinary skill must guess about how exactly the teachings of the Hutton et al. patent would substitute for making the data medium of claim 1 and whether the Hutton et al. patent would be capable of providing sufficient teachings to make at least some of the features of claim 1.

In fact, the Hutton et al. patent makes no explicit suggestion of any kind about its suitability for making the data medium of claim 1. Additionally, the Hutton et al. does not indicate the desirability of arranging the ink areas in the manner prescribed by claim 1 of the pending application. About the most that can be said for the Hutton et al. patent is that it does not explicitly describe anything inconsistent with claim 1. However, this negative pregnant is not enough to show anticipation.

As is well understood, in order to anticipate, a prior art reference must describe the claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it. It is respectfully submitted that the Hutton et al. patent does not sufficiently disclose or suggest the inventive features of claim 1.

- e. Known intaglio printing methods at the time of the Hutton et al. patent



The known intaglio printing methods known at the time of publication of the Hutton et al. patent would not produce the data medium according to claim 1 of the pending application. The Hutton et al. patent was published in 1973. At that time, intaglio printing was to be understood as manual engraving or etching. Manual engraving and etching methods result in printed images in which individual engraved depressions form spaced apart color areas. It was understood that if the impressions formed from manual engraving or etching methods are too close together, a blurring of the ink areas will occur in the printed ink areas.

Each of the methods known and used at the time of publication of the Hutton et al. patent was published did not permit the arrangement of adjacent ink areas directly in contact with one another. Thus, it is advanced however that the reason the Hutton et al. patent refers to the image and background lines as being spaced from one another is because it was the only known arrangement to one skilled in the art in 1973.

Advances in engraving intaglio printing plates by using computer controlled engraving methods by means of rotogravure, electron beam or laser beam were developed after 1973 (written description of pending application on page 1, lines 21-26). The recently developed means were not available or widely used in making intaglio printing plates at the time of publication of the Hutton et al. patent and, as such, the different embodiments according to the Hutton et al. patent are limited to having ink areas that are spaced apart.

**VIII. CONCLUSION**

For the reasons set forth above, appended claim 1 of the pending application define subject matter that is not anticipated within the meaning of 35 U.S.C. § 102(b) over the Hutton et al. patent.

The fee required by 37 C.F.R. § 1.17(c) is enclosed herewith.

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Respectfully submitted,

A handwritten signature in black ink, appearing to read "Justin J. Cassell", written over a horizontal line.

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**APPENDIX I**  
**of U.S. Application No. 09/787,919**

**CLAIMS ON APPEAL**

## **Claims on Appeal**

1. A data medium comprising a printed image produced by the intaglio printing process, said image comprising at least one first ink area with a first ink layer thickness and at least one second ink area with a second ink thickness adjacent to the first ink area, wherein the ink layer thicknesses are different, the first and second ink areas are directly adjacent to each other and are separated from each other by an acute and discrete border line not visible to the naked eye, and that the ink layer thickness of both ink areas passes through a minimum in the region of the border line such that said first and second ink areas do not intermingle with one another.

2. The data medium according to claim 1, wherein the minimum is an ink layer thickness of almost zero.

3. The data medium according to claim 1 or 2, wherein the first ink area and/or the second ink area represent a pattern, graphical symbol or text symbol.

20. A data carrier according to claim 1 or 2, wherein the ink areas are of linear or areal form.

23. The data medium according to claim 1, wherein the first and second ink areas join at the borderline.

24. A data medium comprising:

a printed image disposed on a first side of the data medium, and produced by the intaglio printing process, said image comprising at least one first ink area with a first ink layer thickness and at least one second ink area with a second ink thickness adjacent to the first ink area;

a plurality of depressions defined on a second side of the data medium, each depression generally corresponding to one of the first and second ink areas;

wherein the ink layer thicknesses are different, the first and second ink areas are

directly adjacent to each other and are separated from each other by an acute and discrete border line not visible to the naked eye, and that the ink layer thickness of both ink areas passes through a minimum in the region of the border line such that said first and second ink areas do not intermingle with one another.

25. The data medium according to claim 24, wherein the depth of the depressions corresponds to the thickness of the first and second ink layer thicknesses.

26. The data medium according to claim 24, further comprising a peak defined on the second side of the data medium and generally corresponding to the border line located between the first and second ink areas.

27. The data medium according to claim 26, wherein the pitch of the peak is dependent upon the sharpness of flank angles of the first and second ink areas.